

Home Theater Master® LCD Screen Preprogrammed and Learning Remote Control



**MX-500™
Operating
Manual**

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1. Introduction

Congratulations! You have purchased one of the most sophisticated remote controls on the market.

The MX-500™ has been designed to provide a new standard in remote control technology offering a very powerful and flexible preprogrammed and learning product.

Setting up your MX-500™ to operate your components is easy. Please follow the instructions in the manual and retain the manual for future reference. If any words used are unfamiliar to you, please refer to page 46 for a **Glossary** of terms used in this manual.

Your MX-500™ can operate up to ten home entertainment and home automation components by using the preprogrammed code library in the remote control, by teaching up to 530 commands into the MX-500™ from your original remote controls, or a combination of both.

The MX-500™ has many additional operating features to add convenience and enjoyment to the operation of your home entertainment system. You can create your own labels of the buttons on the LCD screen; program 50 favorite channel buttons; operate the volume, channel and transport buttons from one device when you are in another device; and have multiple things done with one press of a button!

1. Introduction

There is also a list of **Frequently Asked Questions (FAQ)** for the MX-500™ on the website that may prove to be helpful. Visit www.hometheatermaster.com for FAQs.

For any questions or comments about the MX-500™, please visit our website, www.hometheatermaster.com or contact us at:

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Harrison, NY 10528

Tel: 914-835-4484

You can also e-mail us at service@urcmx.com.

Regular customer service hours are 9:00 AM to 6:00 PM EST, Monday – Friday.

2. Batteries

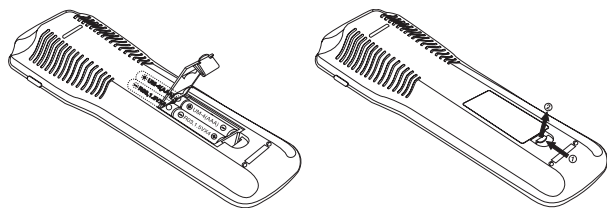
A. Battery Installation

Before the remote control can be used, the batteries need to be installed. First, remove the battery cover on the back of the unit and install the four AAA batteries inside the battery compartment as shown. Make sure the batteries line up with the (+) and (-) markings. Improper installation could damage the remote control. When you're done, slide the battery cover back on. The remote control starts up automatically and the default devices will appear on the LCD screen.

B. Battery Life

Under normal operating conditions, the batteries will last approximately six months. If the batteries are running low, you will notice reduced range from the remote, commands that are not sent properly, or are not sent at all. You may also notice the backlighting of the LCD screen and the buttons is diminished. Should any of these occur, replace the batteries immediately. To ensure proper performance of the unit, use 4 new AAA alkaline batteries.

The remote control will retain the commands and settings in memory even after the batteries are low or become discharged. See Memory Lock on page 46. However, you should replace the worn batteries with a fresh set as soon as possible. Do not mix new and used batteries.



3. Summary of Operations

A. Description of Devices

The MX-500™ is designed to operate up to ten components including **Audio Receivers, Cable and Satellite Boxes, TV, DVD (LD), VCR, DVR, CD, Tape and AUX.**

However, each of the device buttons and corresponding functions can be changed to meet your individual requirements. Almost any device that uses infrared commands can be controlled by the MX-500™, including Home Automation, Personal computers and more.

Each device button on the main screen contains two sub-pages of commands and you can change the name of any LCD button using up to five alphabet characters, numbers and symbols to customize the unit to fit your audio/video devices. Please refer to “LCD Button Editing” on page 39 for additional details.

B. Preprogrammed Codes

The MX-500™ comes with extensive preprogrammed IR codes for practically all major audio and video equipment. You can set up and operate all of your components with the MX-500™ by simply entering a three-digit code number assigned to your brand of component. The code numbers for the various brands of components are listed in the back of this instruction manual. Please refer to the programming instructions shown on page 13 for details.

3. Summary of Operations

C. Learning From Other Remote Controls

The MX-500™ can learn codes from your original remote controls. There are 26 LCD screens in the MX-500™. Each screen (page) has ten function buttons, including the ten device buttons on the main menu screen that can be taught. In addition, there are 31 buttons and a joystick (thumbpad) that can be taught for each of the ten devices. You can teach up to 530 new functions into the remote control. Please refer to page 19 in this instruction manual for details.

D. Macro Operations

A “macro” is a series of commands that you choose to be sent out with the push of one button. Any function available on your original remote control or in the preprogrammed database can be added to a macro to completely automate what you would normally do by pushing buttons one at a time. It can be as simple as turning on your TV and Cable Box, turning the TV to the appropriate channel for operation with the Cable Box, and changing the Cable Box channel to your favorite morning news. A macro can be configured to Power On your TV, DVD player and receiver, change to the appropriate inputs and outputs, dim your lights and start a movie. It can be as simple or as comprehensive as you want.

There are two types of macro buttons you can use for macro operations:

M1, M2, M3, POWER and SYSTEM OFF Buttons

The M1, M2, and M3 are called “system-wide” buttons because they send out the same signal no matter what device you are currently controlling. The POWER and

3. Summary of Operations

SYSTEM OFF buttons can be made “system-wide” if they are programmed with macros.

(Note: Programming the POWER or SYSTEM OFF buttons with a macro overrides the preprogrammed or learned code on the button.)

See page 26 of this manual for further information. Each of these five buttons is designed to be able to send out a series of up to 20 commands you program into the buttons. One common use is to turn on and turn off all of your A/V components with one button press, but the buttons can be programmed with whatever macro you desire.

Ten Device Buttons

There are ten device buttons and each of these device buttons can send out a series of up to 20 programmed commands when pressed for more than **one second**. These buttons are commonly used in sending audio input codes when you press the button to go to a device. The audio receiver would make an automatic input switch according to the device button you pressed. However, these buttons can be programmed with whatever macro you desire.

E. Favorite Channel Buttons

You can create up to 50 favorite channel buttons in the MX-500™ by programming the most frequently watched channel numbers into these buttons. Each of these buttons can send out up to 10 commands. Please refer to page 24 of the manual for Favorite Channel Programming.

F. Punch Through Operations

The MX-500™ can be set up to operate your audio component volume control buttons (VOLUME UP and DOWN and

3. Summary of Operations

MUTE) while all the other buttons control other equipment. You can also set up the remote to operate channel control and transport functions (PLAY, STOP, REWIND, FAST FORWARD, SKIP-, SKIP+, PAUSE and RECORD buttons) from VCR, DVD, DVR, LD, CD or any other mode while all other buttons in the remote control are controlling other components. Please refer to page 32 in the manual for details.

G. Editing LCD Text

You can write your own text on each of the twenty-six LCD screens. Please refer to page 39 in the manual for details.

H. Cloning The MX-500™

The MX-500™ is capable of sending all the programmed codes and operations from one MX-500™ to another MX-500™. Please refer to page 43 in the manual for details.

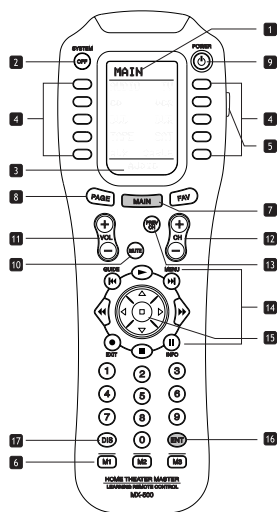
I. All Other Operations

You can set the duration of the backlight on time and change the LCD screen contrast. Please refer to pages 42 and 44 in the manual for additional details.

***Note:** The last Device selected will remain active when you are on the MAIN page and will be shown at the bottom of the LCD screen. For example, if you are using “TV” and then return to the MAIN page, the hard buttons remain in TV mode. The LCD buttons only change when you select another device.*

3. Summary of Operations

J. LCD Screen And Button Layout

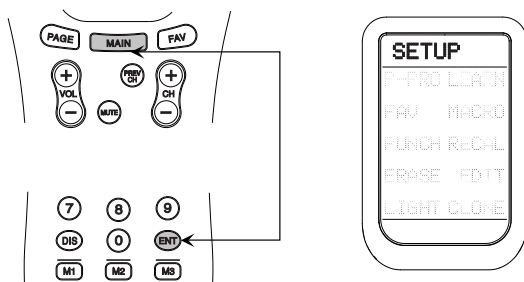


- 1** Displays the name of the device selected.
- 2** System off (Power off)
- 3** Displays page number.
- 4** Displays the device and function names.
- 5** LIGHT button.
- 6** MACRO buttons.
- 7** MAIN DEVICE menu button.
- 8** LCD Page change button.
- 9** POWER
- 10** MUTE
- 11** VOLUME
- 12** CHANNEL
- 13** Previous channel button.
- 14** TRANSPORT functions(PLAY, STOP, REWIND and FF) for VCR, DVR, CD and DVD etc.
- 15** JOYSTICK button(UP, DOWN, LEFT, RIGHT and ENTER) to move the cursor and enter the selection by pushing down the joystick in the center. Also called THUMB PAD.
- 16** ENTER
- 17** DISPLAY

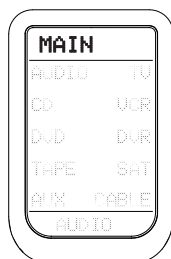
3. Summary of Operations

K. System Settings

All **programming** is done by first entering the **SETUP** mode in the remote control. Press both the **MAIN** and **ENTER** buttons simultaneously for **three seconds** to enter the **SETUP** mode. **SETUP** will be shown at the top of the LCD screen.



You exit the **SETUP** mode by simply pressing the **MAIN** button.



Important: When using the Preprogramming method starting on page 13, always use the appropriate button as shown in the illustration above when asked “FROM TABLE”. You may have already changed the labels of the buttons, but the code tables are in the positions as shown. For example, the **AUDIO** Code Table (refer to pages starting at 58) will **ALWAYS** be the top-left button. The **SAT** Code Table will always be the 4th button down on the right side of the LCD screen, etc.

4. Programming the MX-500™ to Control Your Components

WHERE DO I START?

First of all, get all of your original remote controls together. Find out what brands of components you have. You may have one or more components that do not have original remote controls, but can still be controlled by the MX-500™. You must use the preprogrammed method for those devices. For the rest, you can program the MX-500™ to make it compatible with your components by following the preprogrammed method instructions, by using your original remote controls to teach the MX-500™, or both methods.

Next, it is a good idea to decide whether you want a “Device-based” configuration, or if you want an “Activity-based” configuration.

A “Device-based” configuration centers on each Device with its two LCD pages controlling one component. All of the functions that your original remote control has on it would be put on to one device. The MX-500™ comes with the labels and preprogrammed codes in a “Device-based” setup.

If you go to the “List of Preprogrammed LCD Text by Device” on page 53, you will see diagrams of how the MX-500™ is set up at the factory. When you choose a preprogrammed code for a component from the “Setup Code Tables” in the Appendix of this manual, that code will be applied to one device only.

An “Activity-based” configuration centers on what you are doing at the time. If you are watching a DVD on your TV, and are using your Home Theater receiver to control the

4. Programming the MX-500™ to Control Your Components

sound, you may want to start by setting up the DVD Device using the preprogrammed method described below, and then add functions from the other devices you will be using while watching your DVD video to the DVD device.

For example, while playing a DVD, you will want to adjust the volume of your receiver. So, you would use the “Punch Through” method described on page 32 to put the Receiver's Volume control into your DVD Device. You may then want to adjust other functions of your Receiver while staying in the DVD device, so you would use the learning method described on page 19 to add those functions to your DVD device, such as surround sound controls, the receiver's DVD input code, the TV's power code, etc. Everything that you need for watching a DVD on your TV without having to jump back and forth from Device to Device.

You can decide where on the MX-500™ you want your functions to reside, relabeling the LCD screen buttons (explained on page 39) for those functions, and choosing preprogramming, learning, or a combination of both to fully customize your MX-500™ will give you a remote totally customized to your needs.

So, let's start with learning how to Preprogram the MX-500™.

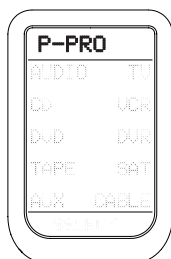
A. Using Preprogrammed Codes

1. Three-Digit Code Number

You can program the MX-500™ to make it compatible with your components by using the preprogrammed method:

4. Programming the MX-500™ to Control Your Components

1. Manually turn on the device you wish to operate.
2. Go to the SETUP mode by pressing both the **MAIN** and **ENTER** buttons simultaneously for **three seconds** until SETUP appears at the top of the LCD screen.
3. Press the **P-PRO** button next to the LCD screen.



4. The remote will be flashing “SELECT BUTTON”. Press the button for the device you wish to program. (For example, to program TV, press the TV button.)
5. The remote will be flashing “FROM TABLE”. Select the device from which you want to access the code table.
Important: If you have already relabeled your device keys, your LCD screen will not look like the illustration above. Select the appropriate LCD button for the “FROM TABLE” using the labels **as shown in the illustration** on page 11 of this manual. For example, if you have relabeled AUX as LIGHTS, you would still push the bottom-left button to access the AUX Code Table.
6. The remote will be flashing “ENTER NUMBER”. Refer to the tables starting on page 58 in the back of this manual and find the manufacturer of your device. (If you are programming the remote for the TV device, find the TV device code table.)
7. Point the remote control toward the device and enter the

4. Programming the MX-500™ to Control Your Components

first three-digit code number you selected for your device. There is no way of knowing which code is the one that will have the functions that more closely match your device than the others, so it is wise to try them all. See step #9 below.

(Please enter the code number within 20 seconds of beginning programming, otherwise the remote will revert to the SETUP menu, and then after a period of time, it will go back to the MAIN device page.)

If there is more than one code number assigned to your brand, try one code number at a time until you find the right code number (the number that **turns off** your device.)

If the device turns off when you enter the three-digit code, make note of the code. It will have at least some of the functions in it that are needed to control your device.

8. Confirm that it is the right code by pressing the Power button. The device should turn on. After you have confirmed that the right code is entered, save the code by pressing the **SAVE** button on the LCD.

9. At this point try ALL of the buttons on the remote, and see which ones work with your device. The majority of the buttons should work with your device. Make note of the code if it seems to be the right one, and try the next one. You are trying to find the one that has the most functions to operate your equipment. If there are any functions missing, you will learn them from your original remote in the “Learning Method” section on page 19.

10. Continue to program other components by repeating from Step 1 above.

11. You can press **EXIT** at any time if you do not wish to proceed.

4. Programming the MX-500™ to Control Your Components

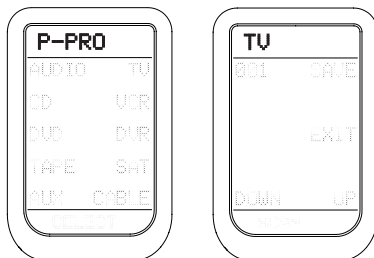
12. When you are finished programming your remote, exit from the preprogramming mode by pressing the **MAIN** button and then exit from the SETUP mode by pressing the **MAIN** button once again.

***Tip:** You can change the preprogrammed code for each device at any time by following the steps above. The new code will override the old code. For example, this would be done if you replaced your old TV with a new one.*

2. Auto Scan With Three-Digit Number

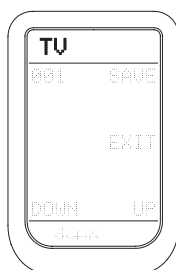
You can also program your remote control by sending out a series of Power Off commands for different brands stored in the library by using the following steps. This is similar to the first method, except it is easier to move through all of the device codes for your device and make note of each one that turns your device OFF.

1. Manually turn on the device you plan to operate.
2. Go to the SETUP mode by pressing both the **MAIN** and **ENT** buttons simultaneously for **three seconds**.
3. Press the **P-PRO** button next to the LCD screen.



4. Programming the MX-500™ to Control Your Components

4. The remote will be flashing “SELECT BUTTON”. Press the device you wish to program. (For example, to program TV, press the TV button.)
5. The remote will be flashing “FROM TABLE”. Select the device from which the scanned code will be selected. (**Important:** If you have already relabeled your device keys, your LCD screen will not look like the illustration above. Select the appropriate LCD button for the “FROM TABLE” using the labels **as shown in the illustration** on page 11 of this manual. For example, if you have relabeled AUX as LIGHTS, you would still push the bottom-left button to access the AUX Code Table.)
6. Point the remote control toward the component and alternately press the **UP** (or **DOWN**) button on the LCD and the Power button. If the right code number is sent, the component will turn off right after the code number is transmitted.



(Please press the **UP** (or **DOWN**) button within 20 seconds of beginning programming, otherwise the remote will revert to the SETUP menu, and then after a period of time, it will go back to the MAIN device page.)

4. Programming the MX-500™ to Control Your Components

7. Confirm that it is the right code by pressing the Power button. After you have confirmed that the right code is entered, save the code by pressing the **SAVE** button on the LCD.
8. Confirm that you entered the right code number that matches your component by pressing other functional buttons. If any of the buttons do not operate, as they should, please repeat from Step 1.
9. Continue to program other components by repeating from step 1 above.
10. You can press **EXIT** at any time if you do not wish to proceed.
11. Exit from Preprogrammed mode by pressing the **MAIN** button and then exit from the SETUP mode by pressing the **MAIN** button once again.

4. Programming the MX-500™ to Control Your Components

B. Learning Method

You can program the MX-500™ to operate a device by “teaching” the correct commands to device buttons on the main screen menu, the two sub-pages within each device button, 31 buttons and the joystick located in the middle of the remote control. The MX-500™ learns these commands by receiving infrared signals directly from your existing remote controls. The MX-500™ receives these signals through its **learning eye**, located at the top of the unit.

Apart from the PAGE, MAIN and FAV buttons, which cannot be taught, the MX-500™ has the capability of learning up to 530 commands.

***Tip:** Function buttons are any buttons that can be assigned a command to control a particular action for your device. Commonly used function buttons include the two pages of sub-commands within each of the 10 devices, channel up and down, volume up and down, menu, guide, exit, info, 0-9, and the joystick.*

Points to Remember

If the remote control fails to learn a function after the first try:

- Keep the remotes stable by placing them on a flat surface.
- Make sure the original remote is pointed at the learning eye at the top end of the case and is not at an angle.
- Make sure both remotes' batteries aren't low.
- Avoid programming the MX-500™ under bright lighting. It can interfere with the infrared signals.
- Try again. Sometimes the second or third attempt works.
- Some buttons require a single, short push of the original remote's button, other “repeating” buttons, such as the VOL button, require that you “press and hold” the original

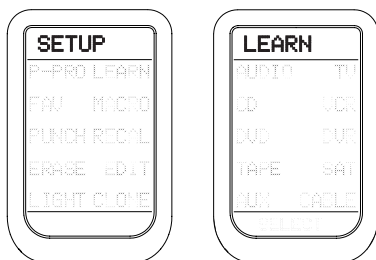
4. Programming the MX-500™ to Control Your Components

remote's button until "Good" flashes twice on the LCD screen.

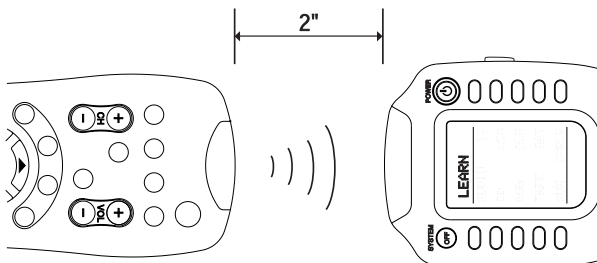
- Try varying the distance between the remotes until you find an optimal distance where the codes are learned on the first or second try.

1. Programming The Function Buttons

1. Go to the SETUP mode by pressing both the **MAIN** and **ENT** buttons simultaneously for **three seconds**.



2. Press the **LEARN** button next to the LCD screen.
3. Select the **DEVICE** that contains the function button you wish to program.
4. Press the **PAGE** button to go to page 2 of the device if you need to.
5. Place your original remote control head to head with the MX-500™ about 2 inches apart on a flat surface as illustrated below.



4. Programming the MX-500™ to Control Your Components

6. Press the button on the MX-500™ you wish to program. Only the three MAIN, PAGE and FAV buttons cannot be programmed.

7. Press the button on your original remote control that you wish to program onto the MX-500™. Once the MX-500™ has received the signal, the MX-500™ will flash “Good” on the LCD screen, indicating it learned the code correctly.

(Please do Step #6 within 20 seconds of Step #5, otherwise the remote will revert to the SETUP menu, and then after a period of time, it will go back to the MAIN device page.)

If it flashes “Fail”, repeat from Step 4 until it learns successfully.

8. Return to Step #3 until you have programmed all of the buttons that you require.

9. Once you complete the programming and wish to exit the LEARNING mode, press the **MAIN** button. Exit from the SET UP mode by pressing the **MAIN** button once again.

***Tip:** Learning to VOL, CH and Transport buttons: If you are having problems learning to the Volume, Channel and Transport buttons, it may be that you have previously assigned a “Punch Through” from another device to that device. To remove a Punch Through, just punch through the device to itself. For example, to erase a punch through from a TV to an Audio Device, just punch through the TV to the TV.*

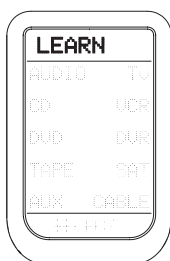
(See “Programming Punch Through” functions on Page 32.)

4. Programming the MX-500™ to Control Your Components

2. Programming The Ten Device Buttons

This will program ONE learned code onto the Device button, so that when you select that Device, it will send out the learned signal as it changes to that Device's function pages.

1. Go to the SETUP mode by pressing both the **MAIN** and **ENT** buttons simultaneously for **three seconds**.
2. Press the **LEARN** button next to the LCD screen.
3. Important: Press the **PAGE** button.
4. Place your original remote control head to head with the MX-500™ about 2 inches apart on a flat surface.



5. Select any of the **ten device buttons** you wish to program on the MX-500™. Press the button on your original remote control you wish to program into the Device button you have chosen on the MX-500™. Once the MX-500™ has received the signal, the MX-500™ will flash “Good” on the LCD screen, indicating it learned the code correctly. If it flashes “Fail”, repeat from Step 4 until it learns successfully. (Please enter the code signal within 20 seconds of programming.)
6. Return to Step #5 until you have programmed all of the Device buttons that you require.

4. Programming the MX-500™ to Control Your Components

7. Once you complete the programming and wish to exit the Learning mode, press the **MAIN** button. Exit from the SETUP mode by pressing the **MAIN** button once again.

***Tip:** Only follow these instructions if you actually want a code sent when changing devices. Some users do not want a Device to send out a code when changing to that device.*

For example: You program the AMP's TV input code on the TV device, and are in the DVD device pages because you are controlling the DVD player. The AMP's input is set to DVD. Now you want to quickly adjust the picture on the TV. If you push the TV Device button, it will change the input on your AMP to TV and you will not be able to adjust the picture for your DVD. In this case, it would be better not to program a code to the TV device. However, your circumstances may be different.

5. Programming Favorite Channels

***Tip:** If you press a wrong channel number, move the cursor by using the left or right button of the joystick and then reassign the correct channel number.*

6. Return to Step #3 until you have programmed all of the FAV channel buttons that you require.

7. Once you have completed the programming and wish to exit from the Favorite Channel mode, press the **MAIN** button. Exit from the SETUP mode by pressing the **MAIN** button once again.

***Tip:** There are five pages of LCD screens for favorite channel programming. You move to other pages by pressing the PAGE or FAV button.*

***Tip:** You can use the following buttons: 0-9, ENTER, DISPLAY, POWER, SYSTEM OFF, and INFO/PAUSE in your FAV macro.*

***Tip:** (For Advanced Users) To make even more powerful FAV macros, you can learn codes from your original remote(s) to the 0-9, ENTER, DISPLAY, POWER, SYSTEM OFF, and INFO/PAUSE buttons in any device, and use them in your FAV macros. (This will not work if you have already applied a preprogrammed device code to those buttons.)*

For example: Some televisions require you to send out a code after the digits other than the ENTER code in order to change channels. For this, you could LEARN the proper code to the ENTER button from your original television remote, and use that in your FAV macro. If you are creative, you can learn any codes to these buttons and make your FAV macros do almost anything!

6. Programming Macro Buttons

A “macro” is a series of commands that you choose to be sent out with the push of one button.

There are **two types of macro functions** you can program with the MX-500™:

The **M1, M2, M3, POWER** and **SYSTEM OFF** buttons are designed to send out up to twenty commands from each of the five hard buttons. The **ten device buttons** can each send a macro of up to 20 commands **when the device button is pressed for more than 1 second** while on the MAIN page of the remote control.

Important: If you program the POWER or SYSTEM OFF buttons with a macro, they will no longer function as ON and OFF buttons for your components. Just erase any macros you have programmed on to these buttons if you want to restore the original ON and OFF function.

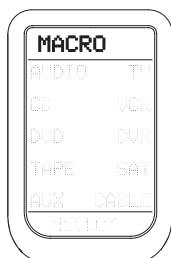
See the “Tips” at the end of this section for help on programming macros.

A. Programming Macro Functions To M1, M2, M3, POWER And SYSTEM OFF Buttons

1. Go to the SETUP mode by pressing the **MAIN** and **ENTER** button simultaneously for **three seconds**.
2. Press the **MACRO** button next to the LCD screen.

6. Programming Macro Buttons

3. Press one of the macro buttons, **M1-M3**, **Power** or **System Off** you wish to store your macro on.



4. Press the functional buttons you wish to store in the device macro button you selected, in the order you want them stored. You can store up to 20 commands.

Important: Do not press the **MAIN** button at the beginning of your macro, or it will not work. You can use the **MAIN** button at any other step in your macro.

5. Be sure to end your macro on the Device page that you would like it to remain on when the macro is sent in normal use.

6. Store the commands you programmed into the macro button by pressing the **Channel Up** button.

7. Return to Step #3 until you have programmed all of the Macros that you require.

8. Once you have completed the programming and wish to exit from this mode, press the **MAIN** button. Exit from the SETUP mode by pressing **MAIN** button once again.

***Tip:** The M1, M2, M3, POWER and SYSTEM OFF macros are “system-wide”, meaning they will function the same no matter what device you are in when you use them.*

6. Programming Macro Buttons

B. Programming Macro Functions To The Ten Device Buttons

1. Go to the SETUP mode by pressing the **MAIN** and ENTER buttons simultaneously for **three seconds**.
2. Press the **MACRO** button next to the LCD screen.
3. Important: Press the **PAGE** button.



4. Press one of the ten device buttons you wish to store your macro on.
5. Press the functional buttons you wish to store in the device macro button you selected in the order you want them stored. You can store up to 20 commands.

Important: Do not press the **MAIN** button at the beginning of your macro, or it will not work. You can use the **MAIN** button at any other step in your macro.

6. Be sure to end your macro on the Device page that you would like it to remain on when the macro is sent in normal use.
7. Return to Step #4 until you have programmed all of the Macros that you require.
8. Save the commands you selected to the macro button by pressing the **CH UP** button.
9. Once you complete the programming and wish to exit from this mode, press the **MAIN** button. Exit from the SET UP mode by pressing the **MAIN** button once again.

6. Programming Macro Buttons

Tip: Remember that a single push of a Device Button that has a macro connected to it will take you to that device's function pages. You will need to hold the Device Button down for **1 second** in order to send out the macro that you have created for that Device Button.

Tip: Pressing the PAUSE button (the key to the bottom right of the cursor pad) during the macro programming will add a time delay of 0.2 seconds between the commands. For example, pressing the PAUSE button three times will create a pause of 0.6 seconds between the commands where the delay was inserted. Pressing the PAUSE button does not count as a macro step.

Tip: When using a macro, remember to keep the remote pointed toward your components until the macro is finished being transmitted. You will notice the “Sending” icon flash in the upper right corner of the LCD screen as the macro is sending out each command. It will not show when a series of PAUSE commands are being executed. Wait until the icon finishes flashing before using other functions or putting the remote down.

Sample Macro: The following is a sample macro, to give you a quick idea of what a macro can do, in an easy step-by-step form. Please refer to “Programming Macro Buttons” above if you need to refresh your memory on programming macros. This example assumes you have not changed the names of the devices and that you have used “punch through” to assign the VOL to your receiver. If you have changed the labels, just insert your changed names in the example below.

6. Programming Macro Buttons

In this case we are going to use the **M1** button to turn on the TV, the receiver, the Cable box, choose the appropriate inputs, and tune in the channel where we normally watch the morning news.

1. Press **MAIN** and **ENTER** simultaneously for **three seconds**.
2. Press **MACRO**.
3. Press **M1**.
4. Press **AUDIO**. (*Takes you to the Audio device page.*)
5. Press **POWER**. (*The button on the top right of the remote.*)
6. Press **TV**. (*This takes you to the TV device page.*)
7. Press **POWER**.
8. Press **MAIN**.
9. Press **CABLE**. (*This takes you to the Cable device page.*)
10. Press **POWER**.
11. Press **MAIN**.
12. Press **AUDIO**. (*We are returning to this page because most receivers and amps take time to “cycle up” and can’t receive any commands, such as input, until the device is ready. So we have had the other steps of the macro running while the Audio device is “cycling up”.*)
13. Press **PAUSE** three times. (*The button on the bottom right of the joystick. We’ve done this since our particular receiver takes longer than normal to “cycle up”, so we have pressed the PAUSE button to insert more time for the receiver to get to the point where it will receive another command. Pressing the PAUSE button three times allows for an extra .6 seconds of wait time. 3 x .2 seconds per push=.6 seconds*)
14. Press **CATV**. (*Since you are in the Audio device, this selects the “CableTV” input on that device.*)

6. Programming Macro Buttons

15. Press MAIN.

16. Press CABLE. (*Back to the this device to enter the appropriate channel.*)

17. Press 1, then 3, then 5. (*Then press the ENT button if your cable device requires it.*)

18. Press CH UP to save the macro.

19. Press MAIN twice.

Press M1 to test your macro.

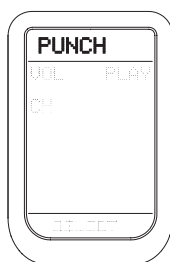
It should turn on your Audio device (receiver for example), then your TV, then your Cable box, then change the input to Cable on your receiver, then change the Channel on your Cable box to 135.

Note: *You can end your macro on any page you like, including the MAIN page. We deliberately ended our macro on the Cable page before we saved it, since that is where we wanted to be at the end of our macro.*

7. Programming Punch Through Functions

You can use the audio receiver volume control in a different mode (for example, Audio receiver Volume Up and Volume Down and Mute in Satellite mode) using the volume punch through feature. You can also have channel punch through (Channel Up, Channel Down) as well as eight VCR (or DVD) transport buttons (Play, Stop, Fast Forward and Rewind, Skip-, Skip+, Pause, Record) operate in another mode such as in Satellite, Cable and Audio modes.

1. Go to the SETUP mode by pressing the **MAIN** and **ENTER** buttons simultaneously for **three seconds**.
2. Press the **PUNCH** button next to the LCD screen.



3. Press the **VOL** button on the LCD for Volume Punch Through, the **PLAY** button for Transport Punch Through and the **CH** button for Channel Punch Through.
4. Select the device you wish to punch through to (1st device example - Television or Cable box.)
5. Select the device you wish to punch through from (2nd device example - Audio receiver.)

You are punching through the controls of the second device to the device that is currently being controlled by any other buttons.

7. Programming Punch Through Functions

For example, for VOL you are punching through the controls of the Audio receiver's VOL to the TV or Cable box, enabling you to control the Audio receiver's VOL when in the TV or Cable box screen.

6. Punch Through is saved when the second device is pressed.

7. Repeat from Step #2 to program Punch Through for other devices.

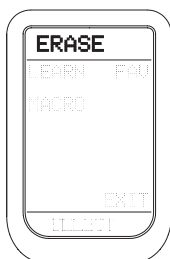
8. Once you complete the programming and wish to exit from this mode, press the **MAIN** button. Exit from the SET UP mode by pressing the **MAIN** button once again.

***Tip:** When using Punch Through, think of the first Device you select as the Device that now controls the functions, and think of the second Device as the device that you want to control those functions. You are taking the controls of the second device and “punching them through” to the first device.*

8. Erasing Existing Programming

A. Erasing Learned Buttons

1. Go to the SETUP mode by pressing both the **MAIN** and **ENTER** buttons simultaneously for **three seconds**.
2. Press the **ERASE** button next to the LCD screen.
3. Press the **LEARN** button.



4. If you wish to erase all the learned functions in the MX-500™, press the **ALL** button and then press the **SURE?** button at the next LCD screen.
5. If you wish to erase all the buttons in a single device or an individual button in the device, press the **DEVICE** button.
6. Press the device button (TV, VCR, Audio, etc.) to erase the button(s) from the device.

***Tip:** Press the **PAGE** button and then press the **DEVICE** button (TV, VCR, Audio, etc.) to erase the learned function in the device button itself. Programming this learned function to the Device button was explained in “Programming the Ten Device Buttons” earlier.*

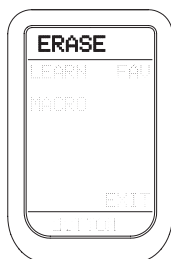
7. Press the **ALL** button if you wish to erase all the learned buttons in the device and press the **SURE?** button at the next LCD screen.

8. Erasing Existing Programming

8. Press a single button if you wish to erase individual buttons one at a time. This will show all the functions in the device. Press the button you wish to erase.
9. Repeat from Step #5 to erase any other devices or learned buttons you require.
10. Press the **MAIN** button to exit to main Erase mode. Press the **MAIN** button once again to exit the SETUP mode.

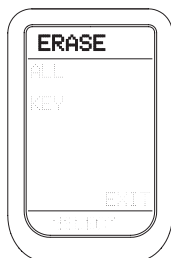
B. Erasing Favorite Channel Buttons

1. Go to the SETUP mode by pressing both the **MAIN** and **ENTER** buttons simultaneously for **three seconds**.
2. Press the **ERASE** button next to the LCD screen.
3. Press the **FAV** button.



4. If you wish to erase all the favorite channel buttons in the MX-500™, press the **ALL** button and then press the **SURE?** button at the next LCD screen.
5. If you wish to erase one button, press the **KEY** button. Press the individual button you want to erase and continue with any other individual buttons you want to erase.
6. Repeat from Step #5 to erase any favorite channel buttons you require.

8. Erasing Existing Programming



7. Press the **MAIN** button to exit to main Erase mode.
8. Press the **MAIN** button once again to exit the SETUP mode.

C. Erasing Macro Functions

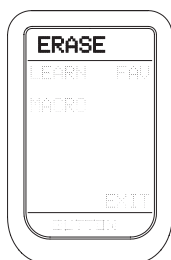
1. Erase M1, M2, M3, POWER and SYSTEM OFF Buttons

1. Go to the SETUP mode by pressing both the **MAIN** and **ENTER** buttons simultaneously for **three seconds**.
2. Press the **ERASE** button next to the LCD screen.
3. Press the **MACRO** button.
4. If you wish to erase all of the macro buttons in the MX-500™, press the **ALL** button and then press the **SURE?** button at the next LCD screen.
5. If you wish to erase just one of the macros, press the **KEY** button at step 4 and then one of the M1, M2, M3, POWER or SYSTEM OFF buttons to erase the macro functions from that button.
6. Repeat from Step #5 to erase any other macro buttons you require.
7. Press the **MAIN** button to exit to main Erase mode. Press the **MAIN** button once again to exit the SETUP mode.

8. Erasing Existing Programming

2. Erase Macro Functions In The Ten Device Buttons

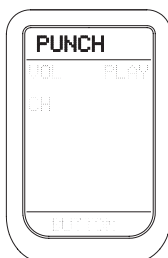
1. Go to the SETUP mode by pressing the **MAIN** and **ENTER** buttons simultaneously for **three seconds**.
2. Press the **ERASE** button next to the LCD screen.
3. Press the **MACRO** button.



4. Press the **KEY** button.
5. Press one of the ten **DEVICE** buttons from which you wish to erase the macro function and then press the **SURE?** button at the next LCD screen.
6. Exit from Macro mode by pressing the **MAIN** button and then exit from SETUP mode by pressing the **MAIN** button once again.

D. Erasing Punch Through Functions

1. Go to the SETUP mode by pressing the **MAIN** and **ENTER** buttons simultaneously for **three seconds**.
2. Press the **PUNCH** button next to the LCD screen.



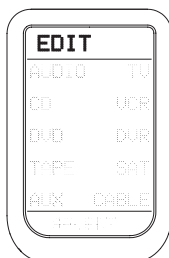
8. Erasing Existing Programming

3. Press the **VOL** button on the LCD for Volume Punch Through, the **PLAY** for Transport Punch Through or the **CH** for Channel Punch Through depending upon which Punch Through you want to erase.
4. Press the **DEVICE** button from which you wish to erase punch through.
5. Press the same **DEVICE** button once again.
6. Punch through is erased when the same device button is pressed the second time.
7. Repeat from Step 2 to erase the Punch Through for other devices.
8. Exit from Punch Through mode by pressing the **MAIN** button and then exit from the SETUP mode by pressing the **MAIN** button once again.

9. LCD Button Editing

A. To Create or Edit Text on Function and Device Buttons

1. Enter the SETUP mode by pressing the **MAIN** and **ENTER** buttons simultaneously for **three seconds**.
2. Press the **EDIT** button next to the LCD screen.



3. Press the **DEVICE** button to display the function buttons for that device.
4. Press the function button on which you wish to write or edit text. You can also go to the second page of the device by pressing the **PAGE** button.
5. To edit **DEVICE button text**, skip Steps 3 & 4 and press the **PAGE** button before selecting the Device button.
6. The character to be changed will blink and you can change the character using the number pad buttons on the remote control. The characters assigned to each number pad button are shown below. It will be rotated to a different character each time the same number pad button is pressed.

***Tip:** You move the cursor left or right using the joystick. You can also delete a current character by using the cursor down of the joystick. Using the “cursor down” technique is a quick way to delete all of the text on a label.*

9. LCD Button Editing

- | | | | | | | | | | | | | | | | |
|--|---|-------|-------|--|---|---|---|--|-----|---|---|--|---|---|---|
| 1. <table border="1"><tr><td>A</td><td>B</td><td>C</td></tr></table> | A | B | C | 2. <table border="1"><tr><td>D</td><td>E</td><td>F</td></tr></table> | D | E | F | 3. <table border="1"><tr><td>G</td><td>H</td><td>I</td></tr></table> | G | H | I | 4. <table border="1"><tr><td>J</td><td>K</td><td>L</td></tr></table> | J | K | L |
| A | B | C | | | | | | | | | | | | | |
| D | E | F | | | | | | | | | | | | | |
| G | H | I | | | | | | | | | | | | | |
| J | K | L | | | | | | | | | | | | | |
| 5. <table border="1"><tr><td>M</td><td>N</td><td>O</td></tr></table> | M | N | O | 6. <table border="1"><tr><td>P</td><td>Q</td><td>R</td></tr></table> | P | Q | R | 7. <table border="1"><tr><td>S</td><td>T</td><td>U</td></tr></table> | S | T | U | 8. <table border="1"><tr><td>V</td><td>W</td><td>X</td></tr></table> | V | W | X |
| M | N | O | | | | | | | | | | | | | |
| P | Q | R | | | | | | | | | | | | | |
| S | T | U | | | | | | | | | | | | | |
| V | W | X | | | | | | | | | | | | | |
| 9. <table border="1"><tr><td>Y</td><td>Z</td><td>Blank</td></tr></table> | Y | Z | Blank | 0. <table border="1"><tr><td>+</td><td>-</td><td><</td><td>></td><td>etc</td></tr></table> | + | - | < | > | etc | | | | | | |
| Y | Z | Blank | | | | | | | | | | | | | |
| + | - | < | > | etc | | | | | | | | | | | |

7. Save the text you completed by pressing the button you were writing on (the same function button you selected in step 3 or device button in step 4.)

8. Exit from Edit mode by pressing the **MAIN** button and then exit from the SETUP mode by pressing the **MAIN** button once again.

B. To Create Or Edit Text for Favorite Channel Buttons

1. Go to the SETUP mode by pressing the **MAIN** and **ENTER** buttons simultaneously for **three seconds**.
2. Press the **EDIT** button next to the LCD screen.
3. Press the **FAV** button and then the favorite channel button on which you wish to write text. There are five LCD pages of favorite channels. Select the page you wish to write on by pressing the PAGE button.
4. The character to be changed on the button you selected will **blink** and you can change the character using the number pad buttons on the remote control. The characters assigned to each number pad button are shown below. It will be rotated to different character each time the same number pad button is pressed.

***Tip:** You move the cursor left or right using the joystick. You can also delete a current character by using the cursor down of the joystick. Using the “cursor down” technique is a quick way to delete all of the text on a label.*

9. LCD Button Editing

1.

A	B	C
---	---	---
2.

D	E	F
---	---	---
3.

G	H	I
---	---	---
4.

J	K	L
---	---	---
5.

M	N	O
---	---	---
6.

P	Q	R
---	---	---
7.

S	T	U
---	---	---
8.

V	W	X
---	---	---
9.

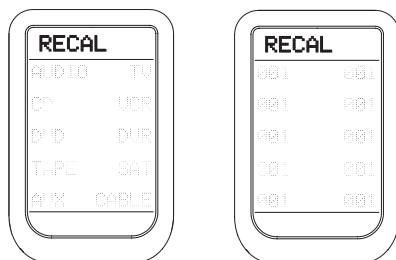
Y	Z	Blank
---	---	-------
0.

+	-	<	>	etc
---	---	---	---	-----

5. Save the text you completed by pressing the same function button you selected in step 4.
6. Exit from Edit mode by pressing the **MAIN** button and then exit from the SETUP mode by pressing the **MAIN** button once again.

10. Recalling the Preprogrammed Three-Digit Number

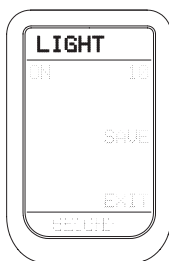
1. Go to the SETUP mode by pressing the **MAIN** and **ENTER** buttons simultaneously for **three seconds**.
2. Press the **RECAL** button next to the LCD screen.
3. The LCD display will alternately flash device names and the three-digit code number assigned to the device for 10 seconds and then exit to the SETUP mode.
4. Before the 10 seconds are up, pressing the **MAIN** button on the remote will stop the flashing and exit to the SETUP mode.
5. Exit from SETUP mode by pressing the **MAIN** button once again.



11. Setting Backlight

The Backlight can be toggled On and Off just by pushing the LIGHT button on the top right side of the remote. It can also be set to go off at a predetermined time, as shown below.

1. Go to the SETUP mode by pressing the **MAIN** and **ENTER** buttons simultaneously for **three seconds**.
2. Press the **LIGHT** button next to the LCD screen.

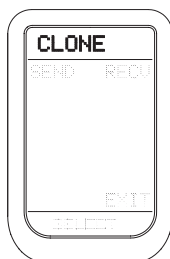


3. Using the number pad buttons, enter the desired backlight time (in seconds). It can go up to 99 seconds. Save the time by pressing the button at the right side of the time you just assigned.
4. Exit from the SETUP mode by pressing the **MAIN** button.

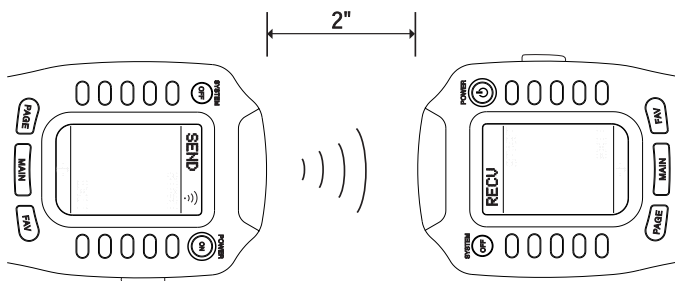
Tip: Note that the time you've entered in *SETUP* for the Backlight to go off is extended each time you push a button. So the light will go off at the predetermined interval *AFTER* you have pushed the last button on the remote.

12. Cloning MX-500™

1. Go to the SETUP mode by pressing the **MAIN** and **ENTER** buttons simultaneously for **three seconds**.
2. Press the **CLONE** button next to the LCD screen.



3. Press either the **SEND** or **RECV** button depending upon the role of the remote control. If the MX-500™ is to be copied from, press the **SEND** button. If it is to be copied to, press the **RECV** button.
4. If you wish to clone the entire device, press the **ALL** button. If you wish to clone only one device at a time, press the **DEVIC** button.
5. If you press the **DEVIC** button, it will show all the devices. Press the device button you wish to clone.
6. Set the MX-500™ head to head with another MX-500™ to be cloned from as shown below. Each unit should be in either cloning from or cloning to mode based on the above steps.



12. Cloning MX-500™

7. Press the **START** button on both units to begin cloning. It will take about 40 seconds to complete the cloning and it will flash “GOOD” upon completion of the cloning.
8. Exit from the Cloning mode by pressing the **MAIN** button and then exit from the SETUP mode by pressing the **MAIN** button once again.

13. Adjustment of LCD Contrast

Pressing the **MAIN** button and **Up** on the joystick simultaneously will make the LCD contrast darker and pressing the **MAIN** button and **Down** on the joystick simultaneously will make the LCD contrast brighter.

14. Caution On Handling LCD Screen

Please note the LCD screen is breakable glass. Please exercise the following precautions when using the MX-500™:

- Do not tap the LCD screen to active devices. Use the rubber buttons beside the labels on the screen.
- Keep the LCD screen dry. Wipe off any spill immediately. The MX-500™ is not waterproof. Never immerse it in water.
- Don't expose the MX-500™ to extreme temperatures. Keep it away from any heat sources.
- Avoid dropping the remote control.
- Clean the LCD screen with a soft cloth. Never use abrasives or cleaning solutions on the soft cloth.

15. Low Battery Message

If the batteries are running low, the LCD displays “LOW BATTERY” whenever you press the **POWER** button or you press the **MAIN** and **ENTER** button simultaneously.

16. Memory Lock

The MX-500™ has an internal memory lock system that retains all of the programs and learned functions for an extended period in the event of battery loss.

17. Glossary

Backlight: A feature that illuminates the LCD screen or keypad for use in low light or dark conditions.

Battery type: The MX-500™ uses 4 standard disposable alkaline AAA batteries, or the new rechargeable alkaline batteries.

Codes: Can refer to either the numeric codes needed to program a preprogrammed remote control, or the actual infrared signals transmitted by remote controls to devices.

Component: See device.

Contrast: Either an arbitrary description of how "clear" an LCD screen is for viewing, or a specific adjustment that allows you to customize the screen's visible characteristics.

Delay: Usually a pause placed between two steps in a macro. Delays may be required in order for some devices to properly sense two separate commands, or may be used to wait for a device to finish powering up. The MX-500™ allows you to change that delay.

17. Glossary

Discrete codes: Versions of toggle codes that only perform one function. Some examples would be "POWER ON" and "POWER OFF" or "VCR," "TUNER" and "DVD" receiver inputs. These types of signals are most often used to ensure your home theater components stay completely in sync for powering on and off and changing device inputs. Some of the preprogrammed codes in the MX-500™ contain discrete codes. If your original remote contains discrete codes, these can be taught to the MX-500™ as well.

Device: The MX-500™ remote control is capable of controlling a certain number of devices, or pieces of equipment. Examples of devices would be televisions, DVD players, receivers or VCRs. Some devices, such as receivers or dual-cassette decks, may be treated by some remotes as more than one device. Also known as components.

Firmware: Indicates the programming software stored on the remote control. The MX-500™ remote can have its firmware flashed (upgraded) to a newer version.

Frequencies: The range of infrared carrier frequencies that a remote control is capable of learning or controlling. Most remotes operate between 30 and 60kHz, however some use higher and are thus known as high frequency. The MX-500™ operates and can learn frequencies between 10 kHz and 100kHz.

Hard buttons: Refers to all physical (mechanical) buttons on a remote control.

High frequency: Indicates an infrared system that employs

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frequencies higher than the industry standard. Some examples would be Bang & Olufsen, Kenwood (455KHz) and older Pioneer Elite (1.125MHz). Such devices are never preprogrammed into off-the-shelf remote controls and can generally only be used with very specific learning remote controls.

Infrared: "IR" A portion of the light spectrum below our visible range, used by many modern remote controls to transmit signals. The MX-500™ uses IR signals.

Infrared emitter: A light emitting diode used to transmit infrared signals from a remote control. Generally, the more and better the emitters, the stronger and wider the resulting signal. A remote with strong emitters can generally be used without pointing at the desired device. Emitters are also partially responsible for any limits on the range of frequencies that can be controlled. Emitters are always placed at the "top" of a remote control and are typically shielded by a red plastic window. The MX-500™ has 2 very strong IR emitters.

Infrared receiver: The portion of a device that receives infrared commands from a remote control. Since infrared is actually light, it requires line-of-sight visibility for best operation, but can still be reflected by items such as walls and glass. Poorly placed IR receivers can also result in what is called "tunnel vision," where they are set so far back into the chassis of a device that the operational range of any remote control is severely reduced.

Joystick: A feature on some remote controls, the joystick is a single pointer which replicates five functions for menu

17. Glossary

control: up, down, left, right and enter. The Joystick on the MX-500™ can be programmed with other commands as well. The Joystick on the MX-500™ is sometimes referred to as a Thumbpad.

Keypad: Generally refers to all hard buttons on a remote control, or more specifically the numeric keypad (0 through 9).

LCD screen: The display device built into the MX-500™. The MX-500™ LCD screen displays mode and programming information, along with macro commands and soft buttons.

Learning: The process through which a remote control captures and stores infrared signals (codes) from other remotes for later use. Some factors which can affect the ability of one remote to learn another would be code length, signal frequency, type of signal and the amount of learning memory available. The MX-500™ is capable of learning to every button, including the joystick, except the Page, Main, Fav buttons.

Macro: Macros are sequences of infrared commands that are played back, in order, by a remote control at the push of a single button. Macros can be used to automate the powering on or off of your system, playing a movie or changing inputs, or in Home Automation.

Memory: The amount of space included on a remote control for storing all settings, such as preprogrammed codes, learned signals, macros, and more. The MX-500™ has a large memory reserve for learning new codes.

17. Glossary

Memory backup: The MX-500™ can retain its programming information for an indefinite amount of time without batteries installed. Remotes that do not feature this may have their programming erased when changing batteries.

Operating distance: The distance from which a remote control can still reliably operate devices. The average infrared range is thirty feet, although the MX-500™ is capable of greater distances.

Page: Refers to a single screen of buttons or information displayed on the LCD panel.

Pause: See **Delay**.

Power off: A feature used by many LCD remote controls to save battery power, it represents entering a "standby" mode after a certain length of inactivity. The MX-500™ uses very little power with the LCD screen on, so the screen remains on at all times.

Preprogrammed: Indicates a library of infrared codes built in to a particular remote. This feature allows a remote to control your equipment without needing to learn individual signals, or replace a particular remote that is lost or broken. The database used for the preprogrammed Device codes may not be able to control all your devices. In this case you can simply use the learning capabilities of the remote.

Punch Through: A term coined to represent the ability to use certain functions from one device under another. For instance, when a remote is set to the "Television" device, the transport keys may be "punched through" to operate the

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VCR, while the volume keys may be "punched through" to operate the audio receiver.

Signals: See “ codes” or “ infrared.”

Thumbpad: A feature on certain remote controls, the thumbpad is a single disc-shaped pointer which replicates five functions for menu control: up, down, left, right and enter. Also referred to as a “ joystick.”

Transport control: A common term for the group of VCR/LD/DVD/DVR media operation controls, such as fast-forward, rewind, play, stop, pause, etc.

Two-way: Some devices actually send information back to a remote control during use. This is known as 2-way communications. Most 2-way components can still be controlled via a 1-way remote, although certain workarounds must be used when learning signals. The MX-500™ is capable of controlling most 2-way components.

Glossary based, by permission, on the the General Glossary on Remote Central.com ©Daniel Tonks

18. Warranty

The MX-500™ is covered against any manufacturer's defects or workmanship for a period of one year from the date of purchase. The warranty does not cover the following items:

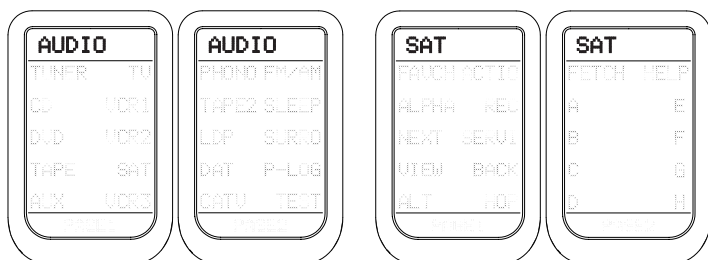
- Batteries or damage to the remote from faulty batteries.
- Damage from misuse, neglect, or acts of nature.
- Products that have been modified or incorporated into other products.
- Products purchased more than 12 months from the current date.
- Units purchased in “AS IS” condition or units purchased as “ Distressed Merchandise.”

19. Specifications

- Range: 40 to 60 feet, depending upon components
- Weight: 8 oz. (with batteries)
- Size: 9.0" x 3.0" x 1.3"
- Batteries: Four AAA Alkaline batteries
- LCD Size: 1.4" x 2.1"

20. APPENDIX

A. List of Preprogrammed LCD Text by Device



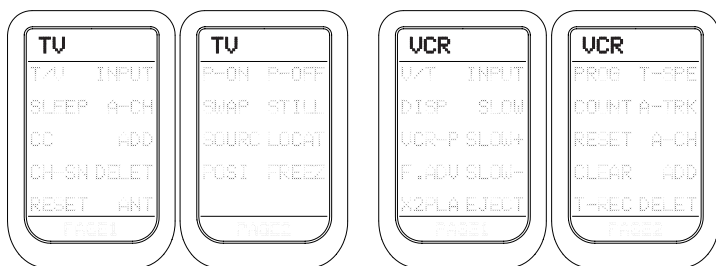
AUDIO

Button Name	Functions
System-OFF	OFF
POWER	ON/OFF
VOL UP	VOL UP
VOL DN	VOL DN
CH UP	PRESET+
CH DN	PRESET -
MUTE	MUTE
PRE-CH	SCAN
UP	UP
DN	DN
LEFT	LEFT
RIGHT	RIGHT
SELECT	SELECT
PLAY	REAR UP
STOP	REAR DN
REW	CENTER DN
FF	CENTER UP
I<<, MENU	MENU/Surr
>>I, GUIDE	GUIDE/Center
O, EXIT	EXIT/Delay
II, INFO	INFO
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	0
DISPLAY	DISPLAY
ENTER	SHIFT

SAT

Button Name	Functions
System-OFF	OFF
POWER	ON/OFF
VOL UP	VOL UP
VOL DN	VOL DN
CH UP	CH UP
CH DN	CH DN
MUTE	MUTE
PRE-CH	PREV CH
UP	UP
DN	DN
LEFT	LEFT
RIGHT	RIGHT
SELECT	SELECT
PLAY	PLAY
STOP	STOP
REW	REW
FF	FF
I<<, MENU	MENU
>>I, GUIDE	GUIDE
O, EXIT	RECORD
II, INFO	PAUSE
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	0
DISPLAY	DISPLAY
ENTER	ENTER

20. APPENDIX



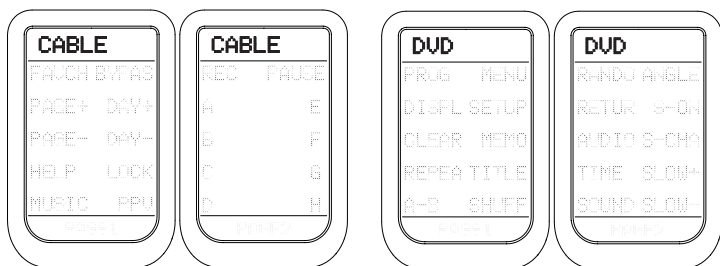
TV

Button Name	Functions
System-OFF	OFF
POWER	ON/OFF
VOL UP	VOL UP
VOL DN	VOL DN
CH UP	CH UP
CH DN	CH DN
MUTE	MUTE
PRE-CH	PREV CH
UP	UP
DN	DN
LEFT	LEFT
RIGHT	RIGHT
SELECT	SELECT
PLAY	
STOP	
REW	
FF	
I<<, MENU	MEMU
>>I, GUIDE	GUIDE
O, EXIT	CANCEL
II, INFO	INFO
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	0
DISPLAY	DISPLAY
ENTER	ENTER

VCR

Button Name	Functions
System-OFF	OFF
POWER	ON/OFF
VOL UP	VOL UP
VOL DN	VOL DN
CH UP	CH UP
CH DN	CH DN
MUTE	MUTE
PRE-CH	PREV CH
UP	UP
DN	DN
LEFT	LEFT
RIGHT	RIGHT
SELECT	SELECT
PLAY	PLAY
STOP	STOP
REW	REW
FF	FF
I<<, MENU	I<<
>>I, GUIDE	>>I
O, EXIT	RECORD
II, INFO	PAUSE
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	0
DISPLAY	DISPLAY
ENTER	ENTER

20. APPENDIX



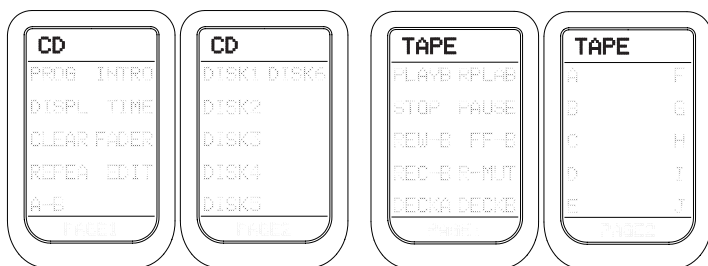
CABLE

Button Name	Functions
System-OFF	OFF
POWER	ON/OFF
VOL UP	VOL UP
VOL DN	VOL DN
CH UP	CH UP
CH DN	CH DN
MUTE	MUTE
PRE-CH	PREV CH
UP	UP
DN	DN
LEFT	LEFT
RIGHT	RIGHT
SELECT	SELECT
PLAY	PLAY
STOP	STOP
REW	REW
FF	FF
I<<, MENU	MENU
>>I, GUIDE	GUIDE
O, EXIT	EXIT
II, INFO	INFO
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	0
DISPLAY	DISPLAY
ENTER	ENTER

DVD/LD

Button Name	Functions
System-OFF	OFF
POWER	ON/OFF
VOL UP	
VOL DN	
CH UP	SKIP+
CH DN	SKIP -
MUTE	
PRE-CH	SEARCH
UP	UP
DN	DN
LEFT	LEFT
RIGHT	RIGHT
SELECT	SELECT
PLAY	PLAY
STOP	STOP
REW	REW
FF	FF
I<<, MENU	I<<
>>I, GUIDE	>>I
O, EXIT	EJECT
II, INFO	PAUSE
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	0
DISPLAY	DISPLAY
ENTER	ENTER

20. APPENDIX



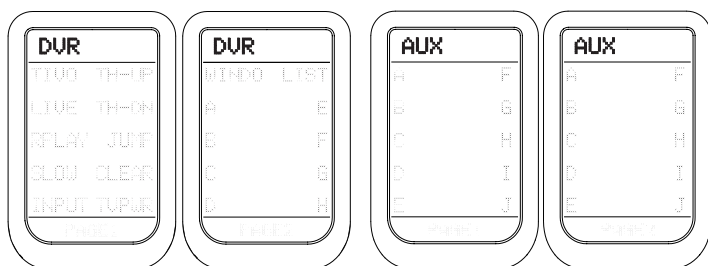
CD

Button Name	Functions
System-OFF	OFF
POWER	ON/OFF
VOL UP	
VOL DN	
CH UP	TRACK+
CH DN	TRACK -
MUTE	
PRE-CH	RANDOM
UP	
DN	
LEFT	SKIP -
RIGHT	SKIP +
SELECT	
PLAY	PLAY
STOP	STOP
REW	REW
FF	FF
I<<, MENU	I<<
>>I, GUIDE	>>I
O, EXIT	EJECT
II, INFO	PAUSE
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	0
DISPLAY	
ENTER	DISC

TAPE

Button Name	Functions
System-OFF	OFF
POWER	ON/OFF
VOL UP	
VOL DN	
CH UP	
CH DN	
MUTE	
PRE-CH	
UP	
DN	
LEFT	
RIGHT	
SELECT	
PLAY	PLAY(A)
STOP	STOP(A)
REW	REW(A)
FF	FF(A)
I<<, MENU	R-PLAY(A)
>>I, GUIDE	Rec-MUTE(A)
O, EXIT	RECORD(A)
II, INFO	PAUSE(A)
1	
2	
3	
4	
5	
6	
7	
8	
9	
0	
DISPLAY	
ENTER	

20. APPENDIX



DVR

Button Name	Functions
System-OFF	OFF
POWER	ON/OFF
VOL UP	VOL UP
VOL DN	VOL DN
CH UP	CH UP
CH DN	CH DN
MUTE	MUTE
PRE-CH	PREV CH
UP	UP
DN	DN
LEFT	LEFT
RIGHT	RIGHT
SELECT	SELECT
PLAY	PLAY
STOP	STOP
REW	REW
FF	FF
I<<, MENU	MENU
>>I, GUIDE	GUIDE
O, EXIT	RECORD
II, INFO	PAUSE
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	0
DISPLAY	DISPLAY
ENTER	ENTER

AUX

Button Name	Functions
System-OFF	OFF
POWER	ON/OFF
VOL UP	VOL UP
VOL DN	VOL DN
CH UP	CH UP
CH DN	CH DN
MUTE	MUTE
PRE-CH	PREV
UP	UP
DN	DN
LEFT	LEFT
RIGHT	RIGHT
SELECT	SELECT
PLAY	
STOP	
REW	
FF	
I<<, MENU	MENU
>>I, GUIDE	GUIDE
O, EXIT	EXIT
II, INFO	INFO
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	0
DISPLAY	DISPLAY
ENTER	ENTER

Set-Up Code Table

B. Three-Digit Preprogrammed Code Table

AUDIO

Manufacturer/Brand	Set-Up Code Number
ADC	007
ADCOM	082 092 225 161 269
AIWA	170 018 104 202 203 213 211 188
AKAI	138 189
AMC	125 126 127 128 258 281 282 038
AMEND	054
AMX	196
ANGSTROM	142
ARCAM	141
ATLANTIC TECHNOLOGY	342
AUDIO ACCESS	147
AUDIO ALCHEMY	135
AUDIO DESIGN	194 221 011
AUDIO EASE	021 196 207
AUDIO FILE	071
AUDIO MATRIX	167
AUDIO SOURCE	273
AUDIO TECHNICA	134
B & K	096 097
BOSE	070 170 224 347 409
BRYSTON	023
CARVER	006 028 061 071 201 214 226 180 185 022 029 077 284
CASIO	076
CHIRO	140
CINEMA SOUND	034 134
CITATION	148 272
CLARION	026
CURTIS MATHES	076
DENON	002 034 109 215 229 230 027 037 234 259 330 340 341 349 350
DELPHI	419
EIGER	149
ELAN	057 290
ENLIGHTENED AUDIO	099 098
ESCIENT	368
FISHER	047 214 180 182 297
FOSGATE	062 231 342
GE	056 260
GOLDSTAR	008
HAFLE	174
HARMAN KARDON	231 233 254 153 154 118 121 227 277 318
HITACHI	020
INKEL	197
INTEGRA	354
JAMO	398
JBL	263
JCPENNY	076 216
JEFF ROWLAND	206
JENSEN	058
JVC	240 163 191 114 266 279 291
KENWOOD	026 066 145 146 181 190 197 192 182 199 151 222 180 005 280
KINERGETICS	220 140
KLH	331
KOSS	216
KRELL	150 072
KYOCERA	007
LEXICON	120 235 236 237
LINN	124
LUXMAN	137 139 052 165 115 004 009
LXI	076 056
MAGNAVOX	086 164 152 208
MARANTZ	006 028 031 040 063 185 186 251 265 119 289 296
MCINTOSH	238 286

Set-Up Code Table

AUDIO

Manufacturer/Brand	Set-Up Code Number
MCS	076
MERIDIAN	100 012 013
MITSUBISHI	242 243 204
MONDIAL	157 158 042 043 081 112
MYRYAD	276 293
NAD	186 113 283
NAKAMICHI	111 244 245 172 183 287
NEC	176
NIRO	343
ONKYO	017 046 064 107 108 187 079 080 090 179 209 270 275
OPTIMUS	026 041 138
OUTLAW	342
PANASONIC	032 195 219 177 292
PARASOUND	129 130 132 261 294 295 333 334
PHAST	196
PHILIPS	249 250 251 063 119
PIONEER	014 033 039 044 045 050 069 159 168 116 035 078 198
POLKAUDIO	029
PROCEED	144 268
RCA	010 048 117 156 067 288
REALISTIC	019 056 073 075 095
REVOX	162
ROTEL	074 083 085
SAMSUNG	016
SANSUI	040 048 110 119 065 228
SANYO	047 059
SCOTT	019 091
SEARS	076
SHARP	026 094 131 175 181
SHERWOOD	024 038 055 102 103 105 106 051 030
SONY	018 093 223 247 248 160 166 015 101 184 218 271 353 369 372 380
SOUNDESIGN	036
SOUNDSTREAM	084 088
SSI	068
SUMO	171
SUNFIRE	246 344 345
TAEKWANG	138
TEAC	005 019 049 111 212 217
TECHNICS	122 176 193 219 178 177 200 257 262
THETA DIGITAL	136
TOSHIBA	060 087 198 278
WARDS	180
YAMAHA	026 253 169 067 173 205 264 232 089 264 274 285
ZENITH	143 210

Set-Up Code Table

SAT

Manufacturer/Brand	Set-Up Code Number
CABLEVISION / VOOM	148
ECHOSTAR / DISH	122
EXPRESSVU	122
GENERAL ELECTRIC	151 106 150
GENERAL INSTRUMENT	148
GOI	122
HITACHI	139 140
HTS	122
HUGHES	068 154 161 162 165 166
JVC	122
MAGNAVOX	136
MEMOREX	136
MITSUBISHI	068 154
MOTOROLA	148
NEXT LEVEL	148
PANASONIC	142
PAYSAT	136
PHILIPS	152 153 156 068 154
PROSCAN	151 106 150
RADIO SHACK	148
RCA	151 106 150
SAMSUNG	123 155 163
SONY	103
STAR CHOICE	148
TOSHIBA	127 068 154
UNIDEN	136
ZENITH	159

Set-Up Code Table

TV

Manufacturer/Brand	Set-Up Code Number
ADMIRAL	072 081 161 160
ADVENT	247
AKAI	197 146 248
A MARK	112 143
AMPRO	167 073 157 183
AMSTRAD	052
ANAM	043 054 056 080 112 131
AOC	197 004 112 058
APEX DIGITAL	006
AUDIOVOX	076
BLAUPUNKT	088
CAIRN	201
CANDLE	197 002 003 004
CAPEHART	058
CETRONIC	043
CITIZEN	197 002 003 004 043 101 103 143
CLASSIC	043
CONCERTO	004
CONTEC	043 050 051
CORONADO	143
CRAIG	043 054
CROWN	043 143
CURTIS MATHES	197 101 004 143
CXC	043
DAEWOO	004 016 043 044 076 103 114 125 127 143
DAYTRON	004 143
DWIN	177 257
DYNASTY	043
DYNATECH	062
EIKI	187
ELECTROHOME	143 024 076 196
EMERSON	028 048 043 155 005 197 004 047 050 051 076 096 143 151 153 154
FISHER	007 057
FUJITSU	198 246
FUNAI	028 043
FUTURETECH	043
GATEWAY	242 268
GE	160 144 165 073 197 008 009 034 056 074 130 155 161 004 091 157 183
GOLDSTAR	113 116 102 004 106 112 119 127 143
HALL MARK	004
HITACHI	011 163 166 004 009 010 012 023 075 143 158 072
INFINITY	164
JBL	164
JCPENNY	004 024 197 008 009 030 065 101 143 156 160
JENSEN	013
JVC	038 034 070 083 145 199 210
KEC	043
KENWOOD	197 070
KLOSS	002 059
KMC	143
KTV	043 197 143 154
LG	113 116 102 004 106 112 119 127 143
LODGENET	072
LOEWE	164
LOGIK	072
LUXMAN	004
LXI	166 007 015 052 081 160 164
MAGNAVOX	164 059 197 003 060 061 004 063 064 127 022 160 094 256
MARANTZ	197 164 184
MATSUI	164

Set-Up Code Table

TV

Manufacturer/Brand	Set-Up Code Number
MEMOREX	007 072 004
METZ	088
MGA	197 004 024 028 042
MINERVA	088
MITSUBISHI	109 124 024 004 028 040 042 146 191
MTC	197 004 062 101
NAD	015 025
NEC	132 130 134 197 040 016 024 056 019 237
NIKEI	043
ONKING	043
ONWA	043
OPTONICA	019 081
ORION	096
PANASONIC	034 056 080 092 164 208 160 261
PHILCO	197 003 059 060 064 164 004 024 056 063
PHILIPS	164 005 093 038 197 003 004 059 127 184 206 259 264
PIONEER	135 025 197 018 023 116 190
PORTLAND	004 143
PROSCAN	144 160 161 165 167
PROTON	004 131 058 143 171 173 193
QUASAR	034 056 092
RADIO SHACK	019 004 143 043 127
RCA	160 165 065 156 144 161 197 004 024 056 152 023 074
REALISTIC	007 019 043 047
ROCTEC	186
RUNCO	168 169 178 179 180 181 182 183 073 157
SAMPO	197 058 004 202
SAMSUNG	050 089 101 105 004 127 143 160 211 228 229 253 254
SANYO	166 007 020 053 057 082 187
SCOTT	028 043 004 048 143
SEARS	015 030 004 007 028 057 143 094 160 082 165 166
SELECO	189 200 205
SHARP	081 019 014 170 028 029 004 022 143 175 251
SIEMENS	088
SIGNATURE	072
SONY	070 139 147 126 185 085 194
SOUNDESIGN	028 004 003 043
SPECTRICON	112
SSS	004 043
SUPRE MACY	002
SYLVANIA	197 003 059 060 063 064 164 044 160 127
TANDY	081
TATUNG	056 062
TECHNICS	034 080
TECHWOOD	004
TEKNIKA	002 003 004 024 028 043 072 101 143
TELEFUNKEN	037 046 086 087
TELERENT	072
TERA	172
TMK	004
TOSHIBA	015 138 030 007 040 062 101
TOTEVISION	143
UNIVERSAL	008 009
VIDEO CONCEPTS	146
VIDIKRON	174 184 188 192
VIDTECH	004
WARDS	004 008 009 019 028 060 061 063 064 072 074 143 164 034
WESTING HOUSE	076
YAMAHA	197 004
YORK	004
YUPITERU	043
ZENITH	073 072 095 103 157 183
ZONDA	112

Set-Up Code Table

VCR

Manufacturer/Brand	Set-Up Code Number
AIWA	034 161
AKAI	016 146 043 046 124 125 142
AMPRO	072
ANAM	031
AUDIO DYNAMICS	012 023 039 043
BROOKSONIC	035 037 129
CANON	028 031
CAPEHART	108
CRAIG	003 040 135
CURTIS MATHES	031 041
DAEWOO	111 116 117 119 005 007 010 065 108 110 112
DAYTRON	108
DBX	012 023 039 043
DYNATECH	034 053
ELECTROHOME	059
EMERSON	006 029 035 017 025 027 031 034 036 037 046 101 129 131 138 153 162 116
FISHER	003 010 008 009
FUNAI	034
GE	031 072 147 063 107 109 144
GO VIDEO	132 136 155 040 115
GOLDSTAR	101 106 114 013 020 012 123
HARMAN KARDON	012 045
HITACHI	004 026 150 018 034 043 063 137 160 013
INSTANTREPLAY	031
JCL	031
JCPENNY	012 013 015 040 066 101
JENSEN	043
JVC	048 043 130 150 055 060 012 031 050 152 166
KENWOOD	014 048 034 047
LLOYD	034
LXI	034 003 009 017 106
MAGIN	040
MAGNAVOX	067 031 034 068 041 156 164
MARANTZ	067 069 012 031 156
MARTA	101
MATSUI	027 030
MEI	031
MEMOREX	101 003 010 014 031 034 053 072 102 134 139
MGA	045 046 059
MINOLTA	013 020
MITSUBISHI	059 061 151 013 020 045 046 051 142 049
MTC	034 040
MULTITECH	024 034
NEC	012 023 039 043 048
NORDMENDE	043
OPTONICA	053 054
ORION	025
PANASONIC	066 070 145 083 133 140 157 163 074 167
PENTAX	013 020 031 063
PHILCO	031 034 067
PHILIPS	031 067 034 101 054 071 156
PILOT	101
PIONEER	021 013 048
PORTLAND	108
PULSAR	072
QUARTZ	002 014
QUASAR	066 145 075
RADIO SHACK	123
RCA	107 109 144 147 158 041 145 013 020 140 034 040
REALISTIC	003 008 010 014 031 034 040 053 054 101
RICO	058

Set-Up Code Table

VCR

Manufacturer/Brand	Set-Up Code Number
RUNCO	148
SALORA	014
SAMSUNG	102 104 113 115 112 120 032 040 066 107 109 122 125
SANSUI	022 043 048 135
SANYO	003 010 007 014 134 102
SCOTT	017 037 112 129 131
SEARS	003 008 010 014 081 013 101 009 017 073 112
SHARP	149 054 031 159 165
SHINTOM	024
SIGNATURE	034
SONY	056 057 058 077 052 003 078 076 031 149 154
SOUNDESIGN	034
STS	013
SYLVANIA	031 034 059 067
SYMPHONIC	034
TANDY	010 034
TATUNG	039 043
TEAC	034 039 043
TECHNICS	031 070
TEKNIKA	031 019 034 101
THOMAS	034
TMK	006
TOSHIBA	112 131 079 008 059 047 082 013 042 081
TOTEVISION	040 101
UNITECH	040
VECTOR RESEARCH	012
VICTOR	048
VIDEO CONCEPTS	012 034 046 141
VIDEOSONIC	040
WARDS	003 013 017 024 031 034 040 053 054 131
YAMAHA	012 034 039 043
ZENITH	072 080 056 048 101 034 058

Set-Up Code Table

CABLE

Manufacturer/Brand	Set-Up Code Number
ABC	004 103 003 039 042 046 053
AMERICAST	099
ANTRONIX	014
ARCHER	005 007 014
BELL SOUTH	099
CABLEVISION	043 108
CENTURION	092
CENTURY	007
CITIZEN	007
COMBANO	080 081
COMSAT	074
COMTRONICS	030
COX DIGITAL CABLE	074
DIGICABLE	101
EAGLE	020 030 040
EASTERN	057 066
EHOSTAR	106
ELECTRICORD	032
GEMINI	008 054
GENERAL ELECTRIC	072
GENERAL INSTRUMENT	103 074 104
GNC	099
GOLDEN CHANNEL	030
HAMLIN	049 050 055
HITACHI	103 055
JERROLD	103 002 003 004 008 009 010 069 074
MAGNAVOX	010 012 064 079 095 094
MEDIA ONE	107
MEMOREX	052
MITSUBISHI	102
M-NET	037
MOTOROLA	074
MOVIE TIME	028 032
NOVAPLEX	092
NSC	015 028 038 071
OAK	031 037 053
PANASONIC	044 047
PARAGON	052
PHILIPS	006 012 013 020 085 095
PIONEER	103 034 051 063 076 105 043
PRUCER	059
PTS	011 071 074
PULSAR	052
RCA	047
RECOTON	098
REGAL	049 050
REGENCY	057
SAMSUNG	030
SCIENTIFIC ATLANTA	043 003 011 041 042 045 046
SIGNAL	030
SIGNATURE	103
SL MARX	030
SONY	096 108
SPRUCER	047 078
STARCOM	002 004 008 009
STARGATE	008 030 097 104
TADIRAN	030
TIMELESS	030
TIME WARNER	043
TOCOM	039 040 056
TOSHIBA	052
UNIKA	007 014
UNITED CABLE	004 053

Set-Up Code Table

CABLE

Manufacturer/Brand	Set-Up Code Number
UNIVERSAL	005 007 014 032 035
VIEWSTAR	012 015 018 086 087 088 089
ZENITH	052 060 093 100

Set-Up Code Table

DVD

Manufacturer/Brand	Set-Up Code Number
ALPINE	098
APEX DIGITAL	087 111 115
DENON	007 080 138
GE	026 027
GO VIDEO	137
HARMAN KARDON	084 140
HITACHI	101
INTEGRA	142
JVC	012
KLH	135
LG/GOLDSTAR	091 057 074
MAGNAVOX	066 096
MARANTZ	083 095
MEMOREX	163
MINTEK	111
MITSUBISHI	017
MYRYAD	102 134
NAD	088
NAKAMICHI	103
ONKYO	076 035
PANASONIC	021 042 138
PHILIPS	066 083 095
PIONEER	023 092 099 107 108 131
PROCEED	086
PROSCAN	026 027
RCA	026 027
SAMSUNG	056 070 119 137 170
SHARP	094
SONY	033 118 145
TATUNG	102
THOMPSON	026 027
TOSHIBA	035 034 130 141 164
YAMAHA	042 089 166
ZENITH	057 074 091

Set-Up Code Table

CD

Manufacturer/Brand	Set-Up Code Number
ADCOM	062 042
AIWA	059 065 088 089 105 122 170 187
AKAI	085 195 202
AMC	231 232
AMEND	118
ARCAM	238
AUDIO ACCESS	119 147
AUDIO EASE	165
AUDIO TECHNICA	046
BSR	037 057
CALIFORNIA AUDIO	103 008
CAPETRONIC	063
CARRERA	057 080
CARVER	185 041 044 050 086 107 130 134 135 138 139 203 204 167
CASIO	111 182
CLARINETTE	182
CREEK	159
CROWN	035
DENON	002 123
EMERSON	042 069 102
FISHER	050 185 134 008
FRABA	111
GENEXXA	010 069 102
GOLDSTAR	080
HAITAI	093
HARMAN KARDON	018 033 047 208
HITACHI	042 175
INKEL	130 143 144
JC PENNY	014 061 092 141
JENSEN	158
JVC	004 022 136 163 213 214 242 243
KENWOOD	185 007 023 055 071 072 142 137
KOSS	061
KRELL	241
KYOCERA	005
LOTTE	102
LUXMAN	011 028 070 076 249 252
LXI	059
MAGNAVOX	044 107
MARANTZ	027 041 044 051 077 107 209 246
MCINTOSH	212 247
MCS	014 073 092
MEMOREX	010
MISSION	044 107
MITSUBISHI	179
MITSUMI	153
MODULAIRE	182
MONDIAL	147
MYRYAD	244 155
NAD	006 005 067 178
NAKAMICHI	217 218 219 095
NEC	014 062
NIKKO	046
NSM	044 107
ONKYO	030 038 039 168 169
OPTIMUS	010 050 057 058 081 082 083 085 093 195
PANASONIC	103 201 172 008 068 248
PARASOUND	233 240
PHILIPS	041 044 107 246
PIONEER	010 020 025 056 174 175 176
PROCEED	239
PROTON	044 107 228

Set-Up Code Table

CD

Manufacturer/Brand	Set-Up Code Number
QUASAR	103 008
RADIO SHACK	182
RCA	017 042 150
REALISTIC	042 050 051 102 181 182 187
ROTEL	044 107 161 178 250
SAE	044 107
SANSUI	044 069 107 128 171 190 125
SANYO	050
SCOTT	069 102
SHARP	026 031 051 066
SHERWOOD	003 019 051 096 112 115 119 166
SIGNATURE	033
SONY	048 081 097 126 133 177 225 226 164
SOUNDESIGN	251
SUMO	155
SYLVANIA	044 107
SYMPHONIC	052 181
TAEKWANG	195 085
TANDY	010
TEAC	015 034 036 051 052 101 131 140 079
TECHNICS	060 103 200 172 184 008 068
TECHWOOD	076
THETA DIGITAL	234 235
TOSHIBA	006 067 091 160 148
VECTOR RESEARCH	080
VICTOR	004 022 114 124
WARDS	185 033
YAMAHA	024 046 054 186 183 245
YORX	182

Set-Up Code Table

LD

Manufacturer/Brand	Set-Up Code Number
DENON	206 207
MAGNAVOX	032 121
MARANTZ	211
MITSUBISHI	121
NAD	121
PANASONIC	113
PHILIPS	032
PIONEER	106 107 108 121
RCA	002
RUNCO	127
SONY	053 110
TECHNICS	113
THETA DIGITAL	032
TOSHIBA	106
YAMAHA	129

•**Note** : These codes are stored in DVD.

Set-Up Code Table

TAPE

Manufacturer/Brand	Set-Up Code Number
CARVER	008 027 024 036
DENON	105 227
HARMAN KARDON	233
JVC	239 240
KENWOOD	013 023 145
LUXMAN	035
MAGNAVOX	027
MARANTZ	027
MITSUBISHI	242 243
NAKAMICHI	244 245
ONKYO	012 018 019
PHILIPS	027
PIONEER	003 039 050 066
SANSUI	027
SHERWOOD	004 028 030 033 034
SONY	020 022 052 084 089
TEAC	059
YAMAHA	021

Set-Up Code Table

DVR

Manufacturer/Brand	Set-Up Code Number
HUGHES	117
PHILIPS	090 117
RCA	109
REPLAY NETWORKS	075
SONY	104 105
TIVO	090 117

Set-Up Code Table

•AUX - Light, Switch, etc.

AUX

Manufacturer/Brand	Set-Up Code Number
3M	152
AIWA	164
ARCHER	155
AUTON	191
DMX	156
DRAPER SCREEN	204
DREAMVISION	097
DWIN	080 253
EVERQUEST	206
EXTRON	151
FAROUDJA	184
FUJI	209
JERROLD	153
JVC	185
HUNTER DOUGLAS	219
KENWOOD	185
LITE-TOUCH	208 212
LUTRON	158 159 077
MAKITA	186 201
MINDPATH	205
NILES	160 187
NSM	161
PIANO DISC PLUS	085
POLKAUDIO	162
RUSSOUND	081
SCIENTIFIC ATLANTA	163 156
SIMA	082
SOLO ELECTRONICS	207
SOMFY	078 079
SONY	164 165 166
STARCOM	153
TURBOSCAN	167
VELODYNE	203
X-10	183 093 257
XANTECH	168 169 170 171 172 188 189

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